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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,198	07/09/2003	Hyung Jun Kim	29936/39457	9666

4743 7590 10/31/2005

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EXAMINER	
UMEZ ERONINI, LYNETTE T	
ART UNIT	**PAPER NUMBER**
1765	

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/616,198	KIM, HYUNG JUN	
	Examiner	Art Unit	
	Lynette T. Umez-Eronini	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/5/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Easter et al. (US 6,214,732 B1).

Easter teaches a method for determining the endpoint in a chemical mechanical polishing operation of a metal-containing film or when the bulk of an individual metal-containing film within a stack of films is removed (column 5, lines 18-28). The method comprises chemically mechanically polishing a metal-containing film with a polishing slurry (column 7, line 56 - column 8, line 26), withdrawing an effluent slurry from the

polishing (column 8, lines 44-47 and column 9, lines 1-15), measuring an electrode potential or oxidized metal in the slurry (column 11, lines 12-17), and using the Nerst equation (7) to calculate the metal species (column 11, lines 18-50) and when the measured potential changes, indicating a change in the composition of the metal species within the effluent slurry, endpoint is indicated (column 51-32). The aforementioned reads on,

A method of detecting a polishing end point in a chemical mechanical polishing process, comprising the steps of:

using a sensor to detect a variation in the concentration of a material within an initial polishing layer or to detect a variation in the concentration of a material within a polishing stop layer, by measuring the concentration of the material within the initial polishing layer or the concentration of the material within the polishing stop contained in polishing wastewater drained during a polishing process.

Easter also teaches, "a conventional electronic circuit **50** or other means may be connected across terminal **39** and **40** to measure the emf across the open circuit which changes as a result of the changed composition and activity of the metal species within the effluent slurry solution. A signal may be developed from the measured open circuit emf. Any suitable conventional method may be used to measure the open circuit emf and to display a signal of the measured value over time, either digitally, graphically or using other electronic means" (column 11, lines 58-67), which read on,

using an EDP system to database information detected by the sensor; and

feeding back a result to a polisher in real time, wherein if no change in the concentration of the material within the initial polishing layer is obtained, the result is the polishing process continuously proceeds with an initial polishing process condition.

Easter differs in failing to specifically disclose if the concentration of the material within the initial polishing layer is reduced and the concentration of the material within the polishing stop layer is increased, the result is performing the polishing process under a reduced polishing pressure; and

if the concentration of the material within the initial polishing layer is not reduced but kept constant and the concentration of the material within the polishing stop layer is not increased but kept constant, the result is using the end point detection system to send a polishing process stop signal to the polisher, thus stopping the polishing process.

However, the presently claimed feature, if the concentration of the material within the initial polishing layer is reduced and the concentration of the material within the polishing stop layer is increased, the result is performing the polishing process under a reduced polishing pressure; and

if the concentration of the material within the initial polishing layer is not reduced but kept constant and the concentration of the material within the polishing stop layer is not increased but kept constant, the result is using the end point detection system to send a polishing process stop signal to the polisher, thus stopping the polishing process, in the said claim, would obviously have been provided as a result of using Easter's endpoint detection method in the same manner as those of the claimed invention.

Response to Arguments

4. Applicant's arguments with respect to claim 1 has been considered but are moot in view of the new ground(s) of rejection because the former prior art of record fails to teach "A method of detecting a polishing end point . . . comprising the step of: using a sensor --to detect a-- variation in the concentration of a material within an initial polishing layer . . . --by measuring the concentration of the material within the initial polishing layer or the concentration of the material within the polishing stop layer-- contained in polishing wastewater drained during a polishing process; . . ." as recited in the said claim.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynette T. Umez-Eronini whose telephone number is 571-272-1470. The examiner is normally unavailable on the First Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 1765

ltue

October 27, 2005

NADINE G. NORTON
SUPERVISORY PATENT EXAMINER